

405 KAR 18:190. Backfilling and grading.

RELATES TO: KRS 350.020, 350.093, 350.100, 350.151, 350.405, 350.410, 350.450, 350.465, 30 C.F.R. Parts 730-733, 735, 817.102-.106, 917, 30 U.S.C. 1253, 1255, 1266

STATUTORY AUTHORITY: KRS Chapter 13A, 350.028, 350.100, 350.151, 350.465, 30 C.F.R. Parts 730-733, 735, 817.102-.106, 917, 30 U.S.C. 1253, 1255, 1266

NECESSITY, FUNCTION, AND CONFORMITY: KRS Chapter 350 in pertinent part requires the cabinet to promulgate rules and administrative regulations establishing performance standards for protection of people and property, land, water and other natural resources, and aesthetic values, during underground mining activities and for restoration and reclamation of surface areas affected by underground mining activities. This administrative regulation sets forth requirements for backfilling and grading of areas affected by surface operations, including requirements for backfilling and grading of face-up areas and other cut slopes and limited exemptions, timing of backfilling and grading, covering coal and acid and toxic materials, and regrading or stabilizing rills and gullies.

Section 1. Timing of Backfilling and Grading. Surface areas disturbed incident to underground mining activities shall be backfilled and graded in accordance with a relative time-schedule approved by the cabinet in accordance with 405 KAR 18:020.

Section 2. General Backfilling and Grading Requirements. (1) Except as provided in subsection (8) of this section, all disturbed areas shall be returned to their approximate original contour. All spoil shall be transported, placed in a controlled manner, backfilled, compacted (where advisable to ensure stability or to prevent leaching of toxic materials), and graded to:

(a) Eliminate all highwalls (except as otherwise provided in Section 5 of this administrative regulation), spoil piles, and depressions (excluding depressions and impoundments approved pursuant to subsection (4) or (5) of this section);

(b) Ensure a long-term static factor of safety of at least one and three-tenths (1.3) for all portions of the reclaimed land;

(c) Achieve a postmining slope which does not exceed the angle of repose and which does prevent slides;

(d) Minimize erosion and adverse effects on surface and groundwater both on and off the site; and

(e) Support the approved postmining land use.

(2) Spoil, except excess spoil disposed of in accordance with 405 KAR 18:130, shall be returned to the excavated surface areas.

(3) Disposal of coal processing waste and underground development waste in the mined-out surface area shall be in accordance with 405 KAR 18:140, except that a long-term static safety factor of one and three-tenths (1.3) shall be achieved.

(4) Small depressions may be constructed on backfilled areas, if the depressions:

(a) Are needed to minimize erosion, conserve soil moisture, create or enhance wildlife habitat, or promote vegetation;

(b) Are not disapproved by the cabinet;

(c) Are not substitutes for compliance with approximate original contour requirements;

(d) Do not adversely affect the stability of the backfilled area; and

(e) Are not located on steep-slope outcrops.

(5) Impoundments on backfilled areas may be approved, if the impoundments:

(a) Meet the applicable requirements of 405 KAR 18:060, Section 10 and 405 KAR 18:100;

(b) Are demonstrated, to the satisfaction of the cabinet in the permit application, to have no adverse effect on the stability of the backfilled area;

- (c) Are consistent with and suitable for the approved postmining land use;
- (d) Are specifically approved by the cabinet in the permit application; and
- (e) Are not located on steep-slope outcrops.

(6) All underground mining activities on slopes above twenty (20) degrees, or on lesser slopes that the cabinet defines as steep slopes, shall comply with the requirements of 405 KAR 20:060.

(7) All final grading; preparation of overburden before replacement of topsoil, topsoil substitutes, and topsoil supplements; and placement of topsoil, topsoil substitutes, and topsoil supplements shall be done along the contour to minimize subsequent erosion and instability. If grading, preparation, or placement along the contour is hazardous to equipment operators, then grading, preparation, or placement in a direction other than generally parallel to the contour may be used. In all cases, grading, preparation, and placement shall be conducted in a manner which minimizes erosion and provides a surface for placement of topsoil, topsoil substitutes, and topsoil supplements which will minimize slippage.

(8) The postmining slope may vary from the approximate original contour if approval is obtained from the cabinet for:

(a) A variance from approximate original contour requirements in accordance with 405 KAR 8:050, Section 6;

(b) Incomplete elimination of highwalls in previously mined areas in accordance with Section 5 of this administrative regulation; or

(c) Incomplete elimination of face-up areas and similar cut slopes pursuant to subsection (9) of this section.

(9) Face-up areas and similar cut slopes created prior to the effective date of SMCRA, as defined at Section 502(a), (b), and (c) therein, that are associated with underground mining activities which were started prior to the effective date of SMCRA and which have continued as existing and ongoing operations pursuant to permits issued under the interim and permanent regulatory programs shall be backfilled and graded in accordance with the requirements of Section 5 of this administrative regulation; except that for the purposes of this subsection "reasonably available spoil" shall not include spoil generated by the operation prior to the effective date of SMCRA which is not accessible and available for use or which would cause a hazard to public safety or significant damage to the environment if rehandled.

Section 3. Disposal of Acid-forming, Toxic-forming, and Combustible Materials and Coverage of Coal Seams. (1) General. Exposed coal seams, acid-forming materials, toxic-forming materials, and combustible materials which are used, produced, or exposed during surface coal mining and reclamation operations shall be handled; disposed of; treated; and covered with nontoxic-forming, nonacid-forming, and noncombustible materials in a manner which:

(a) Minimizes adverse impacts on surface and groundwater, minimizes disturbances to the hydrologic balance, and prevents material damage to the hydrologic balance;

(b) Ensures compliance with 405 KAR 18:060;

(c) Prevents sustained combustion;

(d) Minimizes adverse impacts on plant growth and the approved postmining land use;

(e) Ensures that the affected area is capable of sustaining sufficient vegetation to meet the re-vegetation requirements of 405 KAR 18:200; and

(f) Ensures that the affected area is capable of meeting the postmining land use requirements of 405 KAR 18:220.

(2) Coverage and treatment. All exposed coal seams, acid-forming materials, toxic-forming materials, and combustible materials which are used, produced, or exposed during surface coal mining and reclamation operations shall be covered and treated as necessary to neutralize toxicity, acidity, and combustibility, in order to ensure long-term and short-term compliance with subsection (1) of

this section.

(a) All exposed coal seams shall be covered with a minimum of four (4) feet of nontoxic-forming, nonacid-forming, and noncombustible materials. The cabinet shall require thicker amounts of cover, special compaction of cover, treatment, or other measures as necessary to ensure compliance with subsection (1) of this section and to prevent exposure of the coal seams by erosion.

(b) Excluding exposed coal seams, all acid-forming materials, toxic-forming materials, and combustible materials which are used, produced, or exposed during surface coal mining and reclamation operations shall be:

1. Selectively blended with nontoxic-forming, nonacid-forming, and noncombustible materials; treated; or selectively handled, or an appropriate combination of those measures shall be used, as necessary to ensure compliance with subsection (1) of this section; and

2. Covered with a minimum of four (4) feet of nontoxic-forming, nonacid-forming, and noncombustible materials. The cabinet shall require thicker amounts of cover, special compaction of cover, treatment, or other measures as necessary to ensure compliance with subsection (1) of this section and to prevent exposure of the toxic-forming, acid-forming, or combustible materials by erosion. The cabinet may approve lesser amounts of cover, or no cover (other than topsoil, topsoil substitutes, or topsoil supplements), if the applicant demonstrates, to the satisfaction of the cabinet in the permit application, that the lesser amounts are sufficient to ensure compliance with subsection (1) of this section and to maintain coverage of the toxic-forming, acid-forming, and combustible materials;

3. If required or approved by the cabinet, compacted and placed in an environment which minimizes the oxidation potential of the toxic-forming materials, acid-forming materials, and combustible materials; and

4. If required or approved by the cabinet, disposed so as to minimize surface and groundwater contact with acid-forming materials, toxic-forming materials, and combustible materials. Water contact may be minimized by the encasement of those materials in low-permeability substances and by the compaction and selective placement of those materials in locations other than surface drainage courses, groundwater recharge areas, or areas of significant groundwater flow. As an alternative to minimizing contact with surface and groundwater and if feasible based on site conditions, the cabinet may allow acid-forming materials, toxic-forming materials, and combustible materials be placed below the permanent water table.

(3) The cabinet shall require measures in addition to those identified in subsection (2) of this section if necessary to ensure protection of the environment or the health or safety of the public.

Section 4. Regrading or Stabilizing Rills and Gullies. Except as provided in subsections (1) and (2) of this section, if rills or gullies deeper than nine (9) inches form in areas that have been regraded and topsoiled, the rills and gullies shall be filled, graded, or otherwise stabilized and the area reseeded and replanted according to 405 KAR 18:200.

(1) Rills or gullies less than nine (9) inches deep shall be stabilized and the area reseeded and replanted, if the rills or gullies are disruptive to the approved postmining land use or to the establishment of vegetation, may result in additional erosion and sedimentation, or may cause or contribute to the violation of a water quality standard.

(2) Rills and gullies deeper than nine (9) inches need not be filled, regraded, and revegetated if all of the following criteria are met:

(a) They are incised to solid bedrock or are otherwise stable and not likely to further erode;

(b) They are not disruptive to the approved postmining land use or to the establishment of the vegetative cover; and

(c) They neither cause nor contribute to the violation of water quality standards.

Section 5. Remining Previously Mined Areas. (1) General requirements. Remining operations on

previously mined areas, including steep slope areas, that contain a preexisting highwall shall comply with Sections 1 through 4 of this administrative regulation except as provided in this section.

(2) Variances to backfilling and grading requirements for remining operations. The requirements within Section 2(1)(a) of this administrative regulation to completely eliminate highwalls shall apply to remining operations, except for situations in which the volume of all reasonably available spoil is demonstrated, to the satisfaction of the cabinet in the permit application, to be insufficient to completely backfill and eliminate the preexisting or modified highwall. The highwall shall be eliminated to the maximum extent technically practicable in accordance with the following criteria:

(a) All reasonably available spoil shall be used to backfill the area.

(b) The backfill shall be graded to a slope which is compatible with the approved postmining land use and which provides adequate drainage and long-term stability (one and three-tenths (1.3) long-term static factor of safety). The exposed coal seam shall be covered in accordance with Section 3 of this administrative regulation.

(c) Spoil generated or handled by the remining operation shall not be placed on the fill section of any existing or new bench.

(d) Any highwall remnant shall be stable and not pose a hazard to the public health and safety or to the environment. The permittee shall demonstrate, to the satisfaction of the cabinet in the permit application, that the postmining highwall remnant will be stable. If the highwall remnant is determined by the cabinet to be unstable or potentially unstable, the permittee shall perform any corrective measures required by the cabinet to stabilize the highwall remnant.

(e) Spoil placed on the outslope during previous mining operations shall not be disturbed if the disturbance will cause instability of the remaining spoil or otherwise increase the hazard to the public health or safety or to the environment.

Section 6. Temporary Storage of Materials. (1) After excavation, materials to be used for backfilling in compliance with this administrative regulation shall be returned, for backfilling purposes in accordance with this administrative regulation, to a mined-out area within the permit area or shall be temporarily stored in designated storage areas designs of which have been provided in the permit application and thereby approved by the cabinet.

(2) Temporary storage areas shall be designed and constructed in accordance with the requirements of 405 KAR 18:130 or 405 KAR 18:140, depending on the type of material, except as specified in the following:

(a) If the temporary storage area is to exist for six (6) months or longer, the storage area shall be protected by establishment of an effective cover of nonnoxious, quick-growing, annual and perennial plants seeded or planted during the first normal seeding or planting period following placement of the fill material and resown as necessary thereafter.

(b) Topsoil, topsoil substitute, and topsoil supplement materials to be used in final reclamation of the temporary storage area shall either be stockpiled in accordance with 405 KAR 18:050, Section 3(1) through (3) or temporarily redistributed on areas in accordance with 405 KAR 18:050, Section 3(4). The applicant shall submit, in the permit application, a discussion from a qualified soil scientist or qualified agronomist which indicates, to the satisfaction of the cabinet, that the topsoil stockpile or temporary redistribution plan will minimize adverse effects on the quality and quantity of the topsoil, topsoil substitute, and topsoil supplement materials.

(3) Fills designed and constructed in accordance with this section may be retained as permanent structures if:

(a) The cabinet approves a permit revision submitted in accordance with 405 KAR 8:010, Section 20 for retention of the fill as a permanent structure and for the use of alternate materials to backfill areas and return the disturbed areas to their approximate original contour, in accordance with the requirements of this administrative regulation;

(b) Topsoil, topsoil substitute, and topsoil supplement materials are redistributed on the fill in accordance with 405 KAR 18:050;

(c) The fill is revegetated and reclaimed in accordance with 405 KAR 18:200, 405 KAR 18:220, and all other applicable requirements of KRS Chapter 350 and 405 KAR; and

(d) The borrow area or other area from which the alternate backfill material is obtained is permitted under a valid permit from Department for Natural Resources and is reclaimed in accordance with the requirements of KRS Chapter 350 and 405 KAR. (8 Ky.R. 1578; eff. 1-6-83; Am. 10 Ky.R. 824; eff. 4-23-84; 12 Ky.R. 951; 1332; eff. 2-4-86; 13 Ky.R. 1891; eff. 7-2-87; 15 Ky.R. 498; 1089; eff. 12-13-88; 18 Ky.R. 438; 1877; eff. 11-26-91; TAm eff. 8-9-2007.)